

DOCKET NO.: NOVA-0076
Application No.: 09/911,588
Office Action Dated: August 14, 2003

PATENT
REPLY FILED UNDER EXPEDITED
PROCEDURE PURSUANT TO
37 CFR § 1.116

REMARKS/ARGUMENTS

Claims 1 to 20 and 28 to 34 are pending in the application. Claims 1, 9, and 20 have been amended, and claim 19 has been canceled, herein. No new claims have been added. Following entry of the amendments, claims 1 to 18, 20, and 28 to 34 will be pending in the application.

Applicants respectfully request reconsideration of the rejections of record in view of the foregoing amendments and the following remarks.

Alleged Indefiniteness

Claims 1 to 20 and 28 to 34 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite on a number of grounds. First, the Office Action asserts that the phrase “wherein the cells of the explant are not subjected to enzymatic digestion or partial enzymatic digestion of their cell walls” is indefinite because explants are necessarily wounded or damaged, which results in the activation of various lytic enzymes. The Office Action suggests adding the word “exogenous” to line 6 of claim 1. Without conceding the correctness of the assertion, and to advance prosecution, claims 1 and 9 have been amended to recite “wherein the cells of the explant are not subjected to exogenous enzymatic digestion or partial exogenous enzymatic digestion of their cell walls and the transgene is stably integrated into a chromosome of a cell of the transformed plant.” Support for the amendments is found in the specification as filed at, for example, page 7, lines 22 to 23 and the experimental examples. The rejection has been obviated, and Applicants respectfully request withdrawal thereof.

Second, the Office Action asserts that the phrase “the cultured explant” in line 4 of claim 1 lacks antecedent basis. Without conceding the correctness of the assertion, and to advance prosecution, the phrase “to produce a cultured explant” has been added to line 3 of claims 1 and 9. Support for the amendments is found in the specification as filed at, for example, page 8, lines 7 to 8.

Finally, the Office Action asserts that claim 1 recites an incomplete method because the final step of the claim does not produce the claimed product. Without conceding the correctness of the assertion, and to advance prosecution, the preamble of claim 1 has been amended. Support for the amendment is found throughout the specification as originally filed. The rejection has been obviated, and Applicants respectfully request its withdrawal.

Alleged Lack of Enablement

Claims 1 to 19 and 30 to 43 have been rejected under 35 U.S.C. § 112, first paragraph, for alleged lack of enablement. Although the Office Action acknowledges that the specification is enabling for methods of transforming a plant with a transgene, comprising (a) culturing an intact explant of chrysanthemum, rosa, or petunia in nutritive medium, (b) electroporating the explant with a pulse length of at least about 50 milliseconds but not more than 800 milliseconds, to produce a transformed explant, wherein the transgene is stably integrated into a chromosome of a cell of the transformed explant, the rejection has been maintained because the specification allegedly is not enabling for methods in which the transformed plant is a monocot or gymnosperm. Applicants respectfully traverse the rejection because the specification enables those skilled in the art to make and use the full scope of the subject matter defined by the present claims without undue experimentation.

Preliminarily, Applicants note that, to further clarify the claimed subject matter, the first step of claims 1 and 9 has been amended to recite “culturing an explant of a *dicotyledon* in nutritive medium to produce a cultured explant.” (emphasis added). Support for the amendments is found in the specification as originally filed at, for example, original claim 9 and the experimental examples. No new matter has been added.

Although the Office Action mistakenly asserts that the specification is not enabling because it is allegedly “unpredictable that systems developed for dicots, petunias and chrysanthemum, could be used for be for [sic] monocots or gymnosperms, with a reasonable expectation of success.” (Office Action dated January 15, 2003, page 7), the present claims recite methods for the transformation of *dicotyledon* explants. Since the specification recites detailed methods for three representative genera of three representative families of dicot plants (Solanaceae, Asteraceae and Rosaceae), the specification, coupled with the expertise of those skilled in the art, therefore, enables skilled artisans to make and use the full scope of the subject matter defined by the present claims without undue experimentation. Applicants accordingly, respectfully request withdrawal of the rejection.

Alleged Anticipation

Claims 1 to 17, 19, 20, 28, and 30 to 33 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 5,859,327 (hereinafter “the Dev patent”). Applicants respectfully traverse the rejection because the Dev patent fails to teach or suggest every limitation of the claims. For example, the Dev patent fails to teach or suggest *culturing* an explant of a dicotyledon *in nutritive medium* prior to electroporation. Although the Office Action asserts that the Dev patent teaches culturing maize embryos in nutritive

media prior to electroporation, and cites column 12, line 29 to 34 of the patent in support of the assertion, the patent, in fact, describes placing the embryos in a buffer prior to electroporation that is not a nutritive medium. (Office Action dated August 14, 2003, page 5). The cited passage of the Dev patent describes placing immature maize embryos in a cuvette with an electroporation buffer containing KCl, CaCl₂, Hepes, and mannitol, and then leaving the cuvette on ice for three hours prior to electroporation. As recognized by those skilled in the art, however, the electroporation buffer described in the Dev patent is not a nutritive medium because it lacks essential components of nutritive media. As explained in the specification, growth hormones and vitamins are a necessary component of nutritive media. (See page 9, lines 4 to 10 of the specification as filed). In addition, a source of amino acids is also present in all commonly used plant growth media. Moreover, the Dev patent describes placing the explants in the electroporation buffer and then placing the explants and buffer on ice for three hours. As known to those skilled in the art, 0°C is not a temperature that is conducive to plant growth, and, hence, is not a temperature at which a nutritive medium is required. Because the electroporation buffer described in the Dev patent is not a nutritive medium, the Dev patent fails to teach or suggest every limitation of the claims.

Applicants accordingly, respectfully request withdrawal of the rejection.

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Alleged Obviousness

Claims 1 to 20 and 28 to 43 have been rejected under 35 U.S.C. § 103(a) as allegedly obvious over the Dev patent in view of prior art identified in the specification. Applicants respectfully traverse the rejection because it appears to be based upon the assumption that the Dev patent teaches all the limitations of the claims except the limitations relating to an IPT gene, the CONSTANS gene, a transgene modifying the flowering response, a member of the GATA1 family of transcription factors, zinc-finger containing transcription factors, the GAI gene and genes for gibberellin signaling proteins, SH2-like transcription factors, transcription factors, and transgenes comprising a signal transduction domain. (Office Action dated August 14, 2003, page 6). Because this assumption is incorrect, as noted above, Applicants respectfully request withdrawal of the rejection.

Information Disclosure Statement

As brought to the Examiner's attention in the Reply to the previous Office Action, *Applicants have still not received initialed copies of the 1449 Form that was submitted in connection with the Supplemental Information Disclosure Statement filed May 9, 2002.* Enclosed is an additional copy of the 1449 Form submitted in connection with the Supplemental Information Disclosure Statement filed May 9, 2002 and a copy of the date-stamped postcard indicating that the Supplemental Information Disclosure Statement, 1449 Form, and the four references listed on the 1449 Form were received by the Patent Office on May 16, 2002. Applicants respectfully ask the Examiner to initial the 1449 Form and return it to Applicants' undersigned representative, confirming consideration of the listed references.

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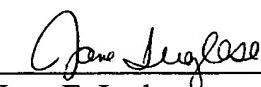
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Conclusion

Applicants believe that the foregoing constitutes a complete and full response to the Office Action of record. Accordingly, an early and favorable Action is respectfully requested.

Respectfully submitted,

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